WebSphere. software

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Redbooks Paper

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Systems Integrators Guide: Integrating WebSphere Everyplace Device Manager with WebSphere Everyplace Subscription Manager

Introduction

This IBM® Redpaper describes integration scenarios related to IBM WebSphere® Everyplace® Device Manager and WebSphere Everyplace Subscription Manager, including:

- Using a WebSphere Everyplace Subscription Manager interface with WebSphere Everyplace Device Manager
- Targeting a WebSphere Everyplace Device Manager job to WebSphere Everyplace Subscription Manager subscribers

Note: Subscription management and device management features used to be bundled as the IBM Tivoli® Personalized Services Manager. Some of the code and commands shown in this paper reflect the former branding.

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Scenario components

This Redpaper primarily focuses on the integration of WebSphere Everyplace Device Manager with WebSphere Everyplace Subscription Manager. Figure 1 shows the various components of WebSphere Everyplace Device Manager.

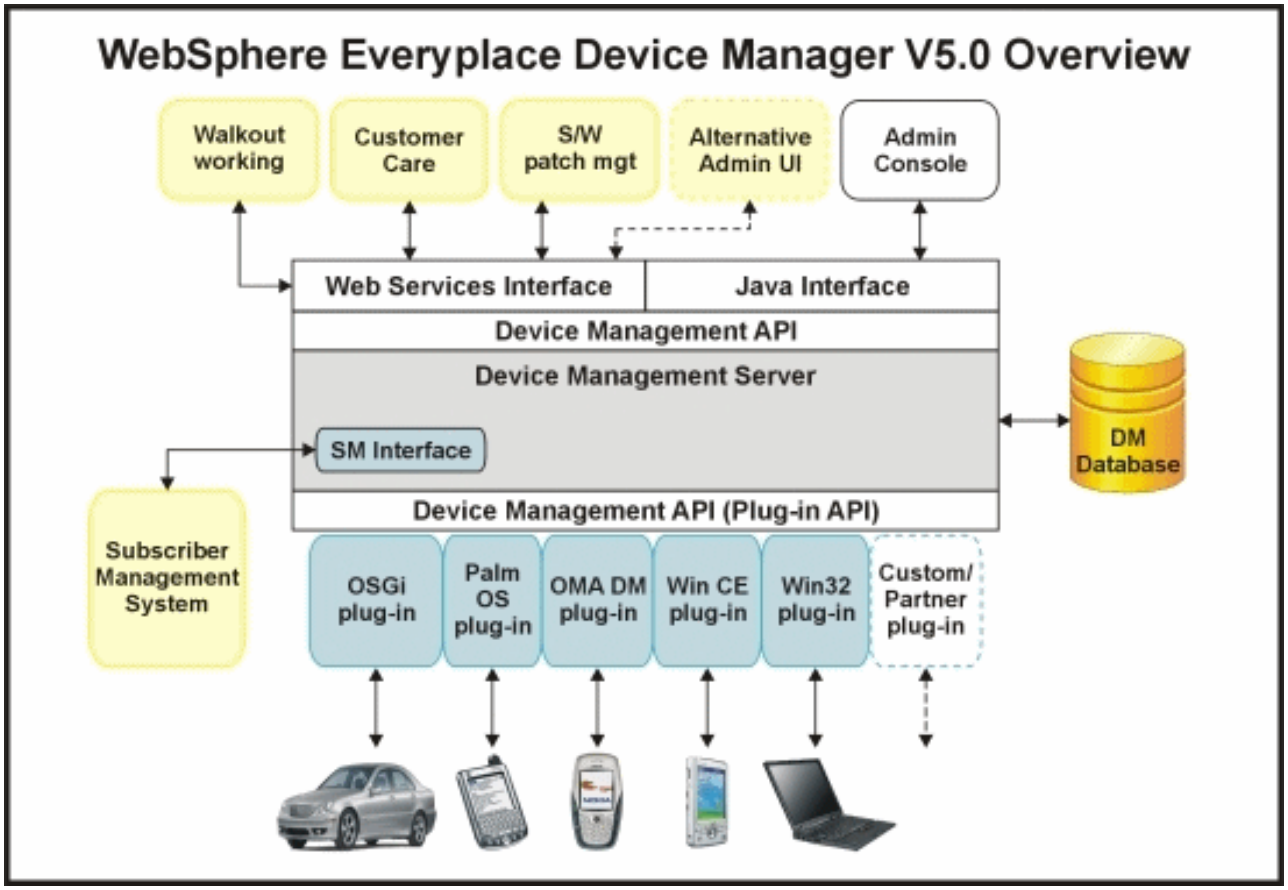

Figure 1 WebSphere Everyplace Device Manager Overview

Setting up the environment

To enable WebSphere Application Server security, click **Enable Security** and be sure to clear **Enable Java2 security**.

Enabling WebSphere Application Server Java2 security is not recommended for setting up the environment because it causes problems with Lightweight Directory Access Protocol (LDAP) authentication. When LDAP user ID strings are greater than 30 characters, the Customer Care and Self Care sign-on does not accept the strings. However, WebSphere Everyplace Device Manager does allow enrollment with long LDAP user ID strings.

During the process of setting up the environment, we also found that:

- The complete LDAP name must be used to log in to the WebSphere Application Server Administrative console when Java2 security is enabled.
- The complete LDAP identifier is required for **`stopServer.sh`** when Java2 security is enabled.

- Disabling Java2 security allows you to log in to the Administrative Console using the LDAP short name.
- You can use the LDAP short name for **`stopServer.sh`** when Java2 security is disabled.

Installing WebSphere Everyplace Device Manager

This section describes how to install WebSphere Everyplace Device Manager and some of the issues that the authors resolved during an installation.

Pre-installation checks

Before you start the installation, verify that IBM DB2® is installed and running on the WebSphere Everyplace Device Manager server. DB2 version 8.1 (32-bit) plus Fix Pack 6 was used for the purposes of this paper.

WebSphere Application Server V5.0 installation on IBM AIX V5.2

Note: See *Installing WebSphere Application Server v5.0.x on AIX V5.2:*

`http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg24004726`

Install the IBM HTTP Server with the WebSphere installer as follows:

1. Choose the custom install option:
   a. Select **IHS 1.3.26**
   b. Clear **Embedded Messaging**

   After the base installation, verify that the httpd.conf file is appended with the following lines:

   ```
   LoadModule ibm_app_server_http_module \
   /usr/WebSphere/AppServer/bin/mod_ibm_app_server_http.so
   WebSpherePluginConfig /usr/WebSphere/AppServer/config/cells/plugin-cfg.xml
   ```
2. Before installing WebSphere Application Server version 5.0 Fix Pack 2:
   a. Make sure that WebSphere Application Server and HTTP processes are not running.
   b. Read the V5.0.2 release notes.
3. Start IBM HTTP Server.
4. Start WebSphere Application Server.

Note: On AIX® V5, a Web-based system management utility that is called WebSM uses the 9090 port in /etc/services. This conflicts with the WebSphere Administration Console and prevents the WebSphere Application Server from starting. Change the `wsmserver` entry in /etc/services to another number and refresh the inetd subsystem. Restart WebSphere Application Server.

Sign in to IBM Support and navigate to this page for the tip:

`http://www.ibm.com/support/entdocview.wss?uid=swg21140807`

WebSphere Everyplace Device Manager installation

A response file may be used to install WebSphere Everyplace Device Manager. Refer to the Information Center for details. The basic installation steps to follow are:

1. Make sure that the users and groups that are referenced by the installer already exist. The WebSphere Everyplace Device Manager database user must have adminstrator privileges.
2. Make sure that there is plenty of room in the file systems designated for the WebSphere Everyplace Device Manager databases (by default, the installation process creates `/db/db2` and `/dmsdb`). Placing these databases in the root (/) file system is not recommended.
3. Make sure that DB2, WebSphere, and IBM HTTP Server are running.
4. Make sure that WebSphere security is turned off prior to installation. If you are prompted for a password while logging in to the WebSphere Administrative Console, security is still enabled. See the Information Center for information about how to disable security.
5. Verify that the installation scripts are executable (for example, the **`installaix.sh`** script as supplied is not executable). If necessary, change to the installation directory and run the following command:

   ```
   chmod +x *.sh *.bat *.bin *.exe
   ```

6. Use **`./installaix.sh`** to start the Tivoli Device Manager Version V1.5 installer. Output is logged to:
   - /tmp
   - /tmp/dms_top
   - /usr/TivDSM15
7. Follow the prompts and populate the fields with the appropriate information.
8. Check the WebSphere Everyplace Device Manager build level with the following command:

   ```
   cat $DMS_HOME/bin/data/Build.name
   ```

Post installation checks

1. Verify that IBM HTTP Server, DB2, and the WebSphere Everyplace Device Manager Server Application Server (DMS_AppServer) are running on the WebSphere Everyplace Device Manager server.
2. Verify that the device classes and job types are registered. **`$DMS_HOME/bin/deviceclass.sh -list`** displays information about the device classes (Example 1).

Example 1 deviceclass.sh -list

```
# cd /usr/TivDMS15/bin
# ./deviceclass.sh -list
[YOU HAVE NEW MAIL]
Updated trace mask to: TYPE_ERROR_EXC TYPE_LEVEL1
Device Class - Palm
-------------------------------------------
Main Java(R) class - com.tivoli.dms.plugin.palm.Palm
Enrollment URL - http://<wedm_server>:80/dmserver/DeviceEnrollmentServlet
Version - 1.5
Description -
Auto Device Naming - false
Device Attribute Table -
Notification Type -
```

```
Device Class - Wince
-------------------------------------------
Main Java(R) class - com.tivoli.dms.plugin.win.wince.Wince
Enrollment URL - http://<wedm_server>:80/dmserver/DeviceEnrollmentServlet
Version - 1.5
Description -
Auto Device Naming - true
Device Attribute Table -
Notification Type -

Device Class - BaseSyncMLDM
-------------------------------------------
Main Java(R) class - com.tivoli.dms.plugin.syncmldm.BaseSyncMLDM
Enrollment URL -
Version - 1.5
Description -
Auto Device Naming - false
Device Attribute Table - SYNCML_DEVICE
Notification Type - WAPPushv12

Device Class - SampleOSGi
-------------------------------------------
Main Java(R) class - com.tivoli.dms.plugin.syncmldm.sampleOSGi.SampleOSGi
Enrollment URL - http://<wedm_server>:80/dmserver/DeviceEnrollmentServlet
Version - 1.5
Description -
Auto Device Naming - false
Device Attribute Table - SYNCML_DEVICE
Notification Type -

Device Class - Win32
-------------------------------------------
Main Java(R) class - com.tivoli.dms.plugin.syncmldm.win32.Win32
Enrollment URL - http://<wedm_server>:80/dmserver/DeviceEnrollmentServlet
Version - 1.5
Description -
Auto Device Naming - false
Device Attribute Table - SYNCML_DEVICE
Notification Type -
```

3. Ensure that the plug-ins for Palm and Windows® CE are registered (Example 2).

Example 2 Ensuring that the plug-ins for Palm and Windows CE are registered

```
# cd /usr/WebSphere/AppServer/logs/DMS_AppServer
# grep -w registered\\.$ SystemOut.log | grep -w dms
SystemOut     O DeviceClass: com.tivoli.dms.plugin.palm.Palm registered.
SystemOut     O DeviceClass: com.tivoli.dms.plugin.win.wince.Wince registered.
```

4. Check the following Uniform Resource Locators (URLs):

   http://*wedm_server*/dms/docs/en/InfoCenter
   http://*wedm_server*/dmserver/PalmServlet (should display a blank screen)
   http://*wedm_server*/dmserver/WinceServlet (should display error 400)

   Note: The Web browser must be at a supported level.

5. Enable WebSphere security.

Example 3 The app.policy entries for DB2 and Java2

```
grant codeBase "file:/usr/opt/db2_08_01/java/db2java.zip" {
  permission java.util.PropertyPermission "*", "read";
  permission java.lang.RuntimePermission "loadLibrary.*";
};
```

If you decide to implement Java2 security, add the DB2 entries to the /usr/WebSphere/AppServer/config/cells/cell/nodes/node/app.policy file (Example 3) using the Java™ policytool graphical user interface (GUI). For example:

```
find /usr -fstype jfs[2] -name policytool -print
```

Note: The DB2 example listed in the Information Center has a typographical error. Ensure that the line containing `java.lang.RuntimePermission` has an asterisk after `loadLibrary`:

For a DB2 database, use the following policy statements:

```
grant codeBase "file:C:/Program Files/SQLLIB/java/db2java.zip" {
permission java.util.PropertyPermission "*", "read";
permission java.lang.RuntimePermission "loadLibrary.*";
};
```

Problem

When DMS App_Server (the instance of WebSphere Application Server) was started, the SystemOut.log included the output shown in Example 4.

Example 4 SystemOut.log output

```
SystemOut     O Updated trace mask to: TYPE_ERROR_EXC TYPE_LEVEL1
SystemOut     O DeviceClass: com.tivoli.dms.plugin.palm.Palm registered.
SystemOut     O 2004.09.29 08:47:09.480 com.tivoli.dms.common.DBOperation executeQuery
Tivoli Tivoli Web Gateway Device_Manager_Server  <server_name>
  DYM2788E: Failed to establish a connection with the database. See nested exception for
details.
com.tivoli.dms.common.DMCommonException: DYM2788E: Failed to establish a connection with
the database. See nested exception for details. : DYA1006E An unknown error occurred. :
COM.ibm.db2.jdbc.DB2Exception: [IBM][CLI Driver] SQL1224N  A database agent could not be
started to service a request, or was terminated as a result of a database system shutdown
or a force command.  SQLSTATE=55032
```

A DB2 workaround to a similar problem is available from:

http://www.ibm.com/support/docview.wss?rs=71&org=SW&doc=1009742

The abstract is not exact, but the fix works.

In AIX V4.3.3 or later, DB2 issues `SQL1224N` and the WebSphere administration server fails with `StaleConnectionException` when you attempt more than 10 local, concurrent DB2 connections from a single process. Java Development Kit (JDK) V1.1.8 allows a maximum of 10 local, concurrent DB2 connections. JDK V1.2.2 allows a maximum of four local connections. JDK V1.3.0 allows a maximum of two local connections.

Resolution

To resolve the problem:

1. As the DB2 instance owner, use:

   ```
   db2set DB2ENVLIST=EXTSHM
   ```

2. Add the following line to sqllib/userprofile (modifications to db2profile may be overwritten in fix packs):

   ```
   export EXTSHM=ON
   ```

   Search the DB2 Information Center for EXTSHM to see additional information.

3. DMS_AppServer starts without errors.

Default subscription manager

The users of the WebSphere Everyplace Device Manager applications (console, Customer Care, and Self Care) must log in with a user ID and password. When WebSphere Everyplace Device Manager is installed, a default subscription manager implementation is created that uses hard-coded user IDs and passwords for each application. The default user IDs and passwords cannot be changed. The hard-coded values are listed in Example 1.

Table 1 Default subscription manager user IDs and passwords

Application	User ID	Password
WebSphere Everyplace Device Manager console	dmadmin	dmadmin
Customer Care	dmcsr	dmcsr
Self Care	owner_name	owner_name

Note: For Self Care, *owner_name* is the name of the device owner.

When you use the default user IDs and passwords, the authorization method returns a `TRUE` value.

Also, the canOwnDevice and canConnectDevice methods always return a true value, so an enrolled device is always authorized to run WebSphere Everyplace Device Manager jobs.

With the default subscription manager, the membership in groups does not change. There is one group called TestGroup that contains one user called TestUser.

Note: The default subscription manager should be used in test or non-production environments only. See the Information Center for information about implementing a custom subscription manager.

Documentation

The documentation for WebSphere Everyplace Device Manager can be found at:

`http://webserver/dms/docs/en/InfoCenter`

WebSphere Everyplace Device Manager console

For this paper, an IBM ThinkPad mobile computer with Microsoft® Windows 2000 was used to run the WebSphere Everyplace Device Manager console. DB2 Administrative Client V8.1 Fix Pack 6 (typical installation) was also installed on the computer console.

Note: Choose **Typical** when installing the DB2 Administrative Client. The typical installation is recommended because a minimal installation lacks needed files.

Starting the WebSphere Everyplace Device Manager console

Run **DMconsole.bat** to start the Microsoft Windows-based WebSphere Everyplace Device Manager console GUI. Use the default user ID and password (dmadmin) to log in. The WebSphere Everyplace Device Manager server can be specified by Internet Protocol (IP) address or fully qualified domain name.

WebSphere Everyplace Device Manager Agents

For the purposes of this paper, the WebSphere Everyplace Win32 agent was installed on a NetVista personal computer and the portable computer console.

The Win32 agent (Figure 2) is actually the WebSphere Everyplace Client. The Win32 agent is synonymous, in this case, with the Open Service Gateway Initiative (OSGi) agent. During the client installation, supply the DMS server address when prompted. The DMS user ID and password information is not required to complete the installation.

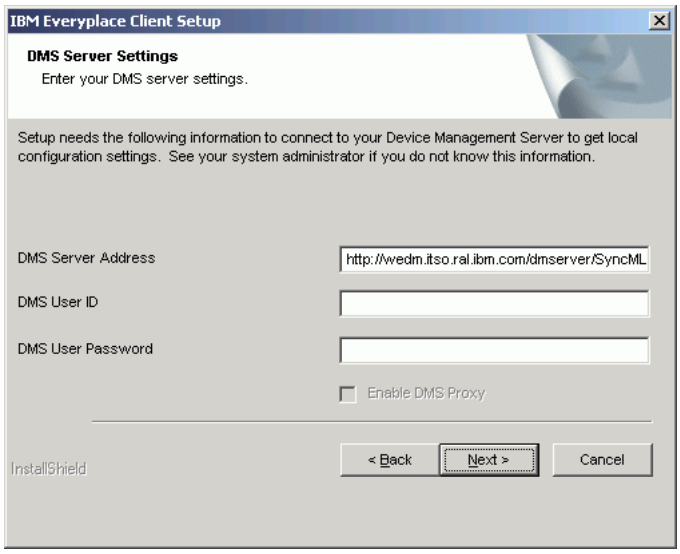
IBM Everyplace Client Setup
DMS Server Settings
Enter your DMS server settings.
Setup needs the following information to connect to your Device Management Server to get local configuration settings. See your system administrator if you do not know this information.
DMS Server Address
http://wedm.itso.ral.ibm.com/dmserver/SyncML
DMS User ID
DMS User Password
Enable DMS Proxy
InstallShield
< Back
Next >
Cancel

Figure 2 Win32 agent install

Connecting to the WebSphere Everyplace Device Manager server for the first time

To connect to the Everyplace Device Manager server for the first time, follow these steps:

1. On the Client Device, start the IBM Everyplace Client Device Agent Control Panel application or browse to:

   `http://localhost/8080/osgiagentservlet`

   Figure 3 on page 9 shows an example of the Win32 agent.

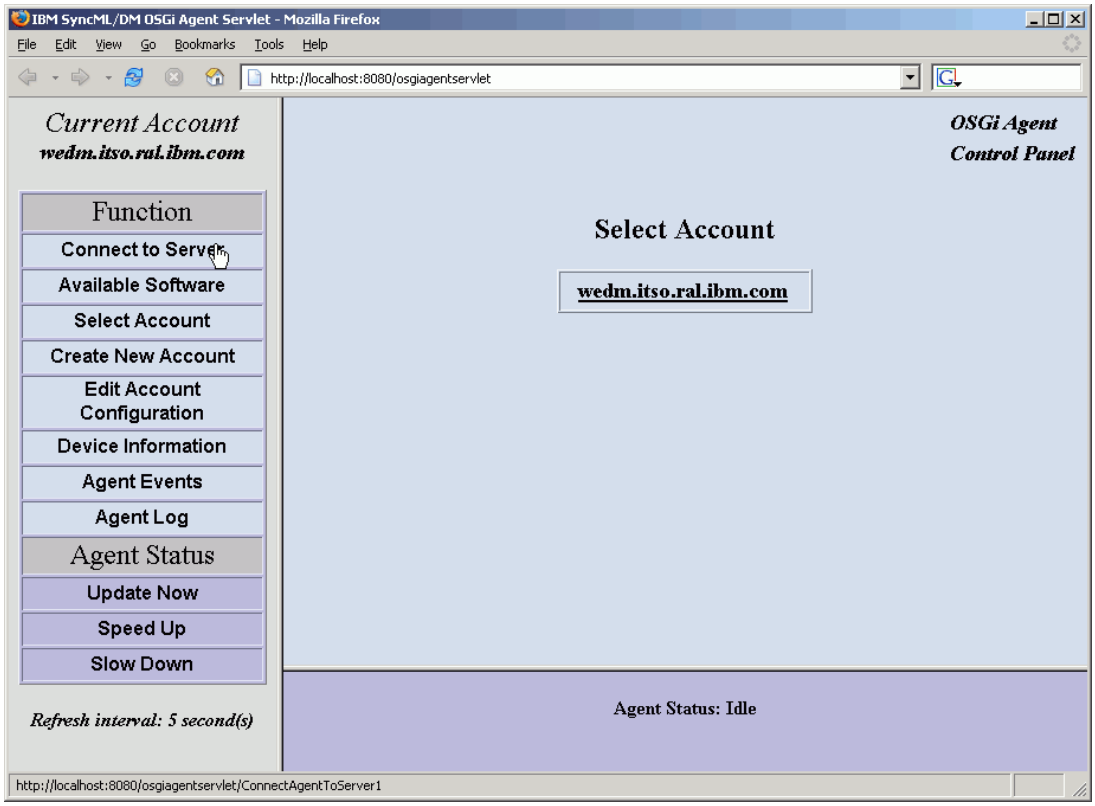

Figure 3 The Win32 agent Interface

2. Click **Edit Account Configuration** as shown in Figure 4 on page 10 and supply the following information:
   - Device user name: `uid=wedm1,ou=users,ou=itso,o=ibm,c=us`

   Note: The LDAP user must be previously defined in WebSphere Everyplace Connection Manager.

   - Device password: *(must match the WebSphere Application Server administrative user)*
   - Server password: *(same as Device Password)*
3. Select **Default account** and click **Update Account**.

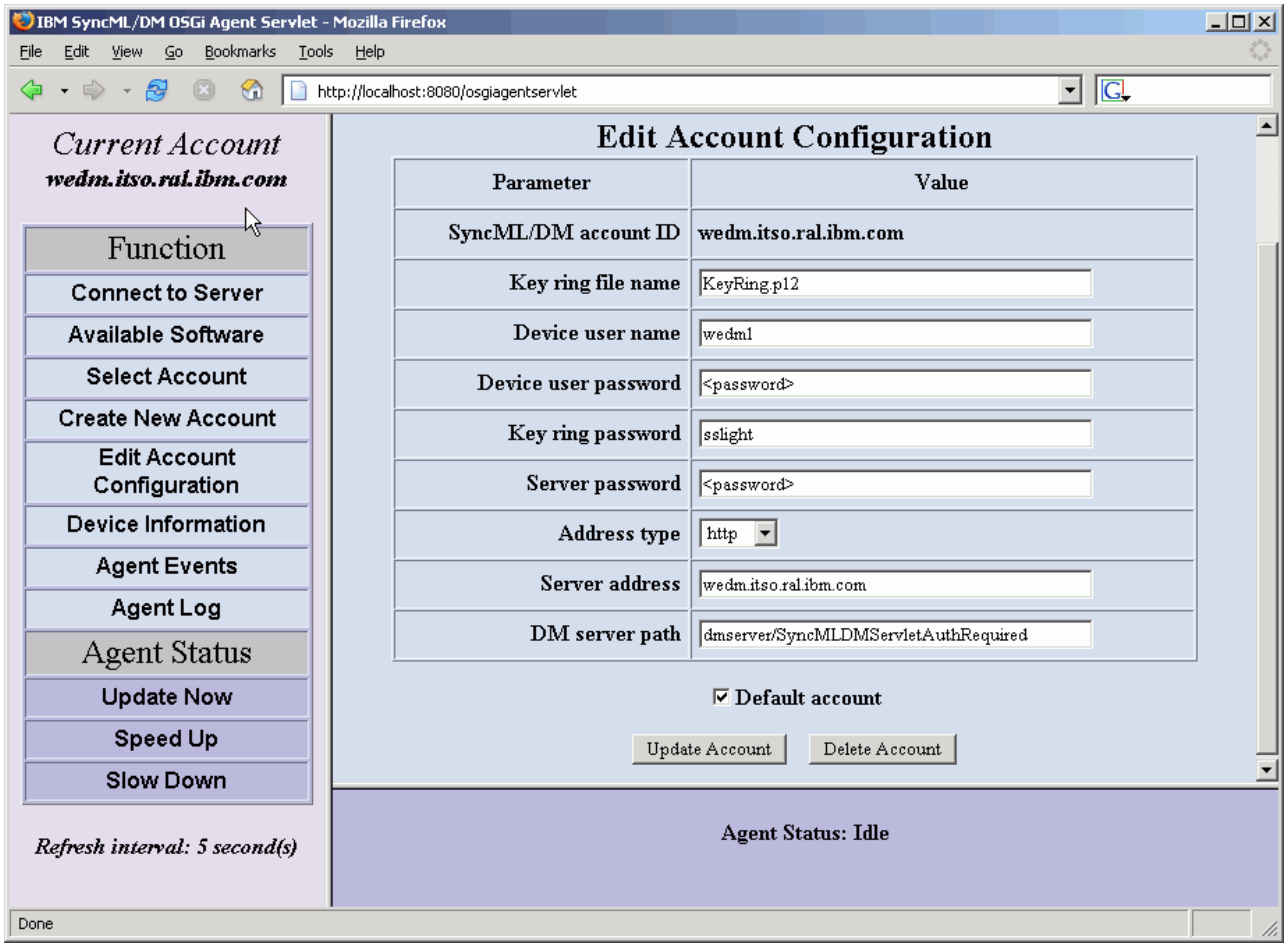

Figure 4 Win32 agent Edit Account Configuration

> **Tip:** Use the **`tail -f`** command on the DMS_AppServer SystemOut.log file on the WebSphere Everyplace Device Manager server node prior to connecting the client device to the server.

- If the authentication information is incorrect, you will see exceptions in `SystemOut.log`.
- If the authentication information was valid, use the WebSphere Everyplace Device Manager console to query devices. The new device should be visible.

4. Enroll the device (create an account):
   a. Using the WebSphere Everyplace Device Manager Console, query devices and right-click the device you wish to enroll. Select **properties**.
   b. Supply the SyncML Device Manager properties as follows:
      - Device user name: `uid=wedm1,ou=users,ou=itso,o=ibm,c=us`
      - Device password: *(match the WebSphere Application Server administrative user)*
      - Server ID: *server IP address*
      - Server password: *(same as device password)*
   c. Click **OK**. Watch `SystemOut.log` for errors.
5. Reconnect the mobile device to the WebSphere Everyplace Device Manager server. There should be no errors in `SystemOut.log`.

Scenarios

This section describes possible scenarios for integrating WebSphere Everyplace Device Manager with WebSphere Everyplace Subscription Manager.

Profile-based job management

WebSphere Everyplace Device Manager supports profile-based job management, which allows you to run a subset of the jobs that are available for a device based on specific criteria.

Using profile-based job scheduling, the WebSphere Everyplace Device Manager server is instructed to use a particular scheduling profile for a particular class of device.

A *profile* is a set of rules that determines what jobs can be run. For example:

- Do not run software distribution jobs for Palm devices on low bandwidth connections unless the job priority is greater than X.
- Do not run Inventory jobs on Windows CE devices unless the device is connected to a cradle.

When creating a profile, consider the following factors:

- `connectionType`
- `jobType`
- `jobPriority`
- `bandwidth_inBitsPerSecond`
- `roughBandwidthMetric_inMilliSeconds`

Note: `connectionType` and `bandwidth_inBitsPerSecond` are only useful for device agents and the associated plug-ins that support them. The use of the profile can be disabled for all devices in a device class or for individual devices.

Using a WebSphere Everyplace Subscription Manager interface with WebSphere Everyplace Device Manager

A user's ability to subscribe to a service that requires a software download must be restricted based on the user's device. For example, if a user is connecting with an OSA/SyncML device, which does not support WebSphere Everyplace Device Manager software distribution, subscriptions that require software download cannot be permitted.

WebSphere Everyplace Subscription Manager can prompt a user to select those devices that are allowed to receive subscribed content from a list.

Consider whether subscription and accounting is per user or per device. If a subscription is allowed, logic can create the appropriate software distribution jobs as detailed in the next section.

Targeting a WebSphere Everyplace Device Manager job to WebSphere Everyplace Subscription Manager subscribers

This scenario details how to create, register, and deploy WebSphere Everyplace Device Manager packages and bundles to WebSphere Everyplace Subscription Manager subscribers.

WebSphere Everyplace Device Manager software distribution

WebSphere Everyplace Device Manager software distribution jobs target a single device, multiple devices in a device class, or all devices in a device class.

A named WebSphere Everyplace Subscription Manager user can own several WebSphere Everyplace Device Manager devices. WebSphere Everyplace Device Manager software distribution jobs are restricted by device class. Several software distribution jobs (one for each device class) must be created to push software to all devices owned by that user.

WebSphere Everyplace Subscription Manager subscribers that do not have a supported device cannot receive WebSphere Everyplace Device Manager software.

Note: Software distribution jobs are not applicable to OMA/SyncML devices.

The number of software distribution jobs can be represented by this equation:

[(Number of WebSphere Everyplace Device Manager device classes) - (Number of WebSphere Everyplace Device Manager device classes that do not support software distribution)] x 2(Number of WebSphere Everyplace Subscription Manager subscriptions requiring software distribution)

The same software must be created as a package and a bundle. With that in mind, follow these steps for adding software applications to WebSphere Everyplace Device Manager:

1. Create a software package or OSGi bundle.
2. Copy the package or bundle to a Web server location that the WebSphere Everyplace Device Manager server can access.

   The Win32 agent is able to submit a Software List Update job upon request. All software applicable to a device class is displayed.
3. Register the software.
4. Create a software distribution job.

Creating a software package or OSGi bundle

A software distribution job sends software packages or OSGi bundles to devices depending on their device class:

- Software packages are applicable to Palm devices and Windows CE devices.
- OSGi bundles are applicable to OSGi devices and Windows 32 devices.

Remember: Software distribution jobs are not applicable to OMA/SyncML devices.

Software can be distributed to an individual device, several devices in the same device class, or all devices in a device class. Software can consist of files, images, databases, installation processes, native software, and other components.

WebSphere Everyplace Device Manager does not maintain a library of software. Instead, the WebSphere Everyplace Device Manager database is used to store a list of URLs that point to software repositories on a Web server. WebSphere Everyplace Device Manager also stores other software-related information in a database. You can use the WebSphere Everyplace Device Manager console to manage information in the WebSphere Everyplace Device Manager database.

Using a software package for software distribution

To make a software package for a software distribution job, follow these steps:

1. Put the files to be distributed on a Web server. The Web server administrator can identify an appropriate directory, which must be accessible to the WebSphere Everyplace Device Manager server.
2. Prepare a package definition file for each application package or group of data files that you are distributing. Place the package definition file into the directory with the files that you wish to distribute.
3. Prepare a meta package definition file for the software package. The meta package definition file references each of the package definition files that make up a software package. Place the meta package definition file into the directory with the files that you wish to distribute.
4. Register the software as described in Registering the software.

Using an OSGi bundle for software distribution

To make a software bundle for a software distribution job, follow these steps:

1. Determine the resource requirements and the corresponding tuning for the OSGi bundle.
2. Determine the scripts to be run before and after the distribution of the OSGi bundle.
3. Determine the prerequisite bundles and services.
4. Create the OSGi bundle JAR file (Java interfaces and classes, a manifest file, and resource files).
5. Put the OSGi bundle on a Web server. The Web server administrator can identify an appropriate directory, which must be accessible to the WebSphere Everyplace Device Manager server.

Registering the software

The Everyplace Device Manager console is used to register the software in the database.

After the software package or OSGi bundle is prepared, it must be copied to a location on a Web server that is accessible by the WebSphere Everyplace Device Manager server. Record the URL for use when registering the software.

Note: JAR files must be readable by the world or `java.io. FileNotFoundException` errors might appear in `SystemOut.log`. File permissions can be modified (if required) using the following command:

```
chmod +r *.jar
```

WebSphere Everyplace Device Manager uses the URL address to locate the software. The URL address must point to an existing meta package definition file or OSGi bundle. WebSphere Everyplace Device Manager parses the file or bundle to retrieve the software properties.

Perform the following actions to register a new software package or bundle:

1. Start the WebSphere Everyplace Device Manager console application.
2. Select **File** → **New Software** from the main menu.

   The New Software Properties page opens. Click **Help** for a description of the fields.
3. Select a software type from the list of available options.
4. Type the URL for the software package or OSGi bundle.

5. Click **Fetch** to retrieve and display the software properties.

   After **Fetch** is clicked, the Software Type and URL fields become read-only.

   To prevent the duplicate of software, no two software packages or bundles can have identical information in the Software name, Version, and Software type fields. At least one of these fields must be different for any two registered software packages or bundles.
6. To continue with the software registration, click **Next** or to exit without registering the software, click **Cancel**.
7. To make the software available for device class and job type combinations, highlight the corresponding table rows in the New Software Properties window. If no combinations are selected, the software is not available for any jobs.
8. Click **OK** to complete the software registration.

You can also register software with the `OSGiBundleTool.sh` script. After the bundle or package has been copied to an HTTP server, run the script. Supply the URL and the appropriate device class. For example:

```
<DM_HOME>/bin/OSGiBundleTool.sh http://<web_server>/<location>/<file.jar> -d \
<device_class>
```

Note: It is important to use the appropriate `-d` option for your device.

Installing software from a device

It is possible to install software from a device without creating a software distribution job as follows:

1. Go to the Device Agent console. For example:

   `http://localhost:8080/osgiagentservlet`
2. Click **Available Software**.
3. Select a software component from the list. Refresh the list if necessary before selecting.

   If the software component has dependencies, those dependencies are installed as well.
4. Click **Install Software**.
5. Use the WebSphere Everyplace Device Manager console to verify that the software has been installed.

Creating the software distribution job

Software can be distributed to an individual device, several devices in the same device class, or all devices in a device class.

Remember: Software distribution jobs are not applicable to OMA/SyncML devices.

To create a software distribution job, follow these steps:

1. Select an individual device, several devices in the same device class, or all devices in a device class to receive the software distribution job.
2. Right-click and select **Submit Job**. If the Target Devices window and a count of the number of target devices are shown, click **Next**.
3. The Attributes window opens. Click **Help** for a description of the fields.
   a. For Job Type, choose **Software Distribution** from the menu of available options. A Notify Target Devices check box might or might not be available based on the notification policy and the device class.

b. Customize any other settings if necessary and click **Next** to continue.

4. Use the Job Parameters window to select software from the Software menu. If needed, click **Add Group** to obtain the Software menu. When distributing OSGi bundles, set Autostart as **True** if you want the OSGi bundle to start automatically after the software is distributed. Select Autostart as **False** to distribute the OSGi bundle without automatic startup. Click **Next** to continue.
5. Use the Submit Job Summary window to review and verify the job parameters. Click **OK** to submit the job.

If the job is submitted successfully, you receive a message that shows the job ID and the number of eligible target devices. The Job ID can be used to do other tasks such as:

- View job history
- View upcoming jobs
- Exclude a device from jobs

WebSphere Everyplace Device Manager has check point and restart capabilities. Software distribution jobs that are interrupted resume where they left off. However, files previously copied to a device are not present when the device reconnects. To verify that software has been distributed to the target device, you can either check to see if the Job ID has completed or right-click the device and select **View Software**.

Conclusion

Integrating WebSphere Everyplace Device Manager with WebSphere Everyplace Subscription Manager is a complex endeavor that requires significant planning.

Some of the issues to consider when you are integrating these WebSphere Everyplace Service Delivery components are:

- Is WebSphere Everyplace Subscription Manager subscription and billing per user or per device?
- How does WebSphere Everyplace Subscription Manager communicate to Everyplace Device Manager that a device is eligible for software distribution?
- How can a software package or bundle be targeted and restricted to a specific device?
- What are the HTTP server administrative implications, even presuming that WebSphere Everyplace Device Manager packages and bundles have been precreated?

You can find help from the following sources:

- WebSphere Everyplace Subscription Manager support page:

  http://www.ibm.com/software/pervasive/ws_everyplace_subscription_manager/support
- WebSphere Everyplace Device Manager support page:

  http://www.ibm.com/software/pervasive/ws_everyplace_device_manager/support
- For information about the Open Mobile Alliance and SyncML, visit:

  http://www.openmobilealliance.org

The team that wrote this Redpaper

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Thanks to the following people for their contributions to this project:

Benson Chen, Technical Consultant
IBM Pervasive Computing Division

Kim Foster, Reviewer
IBM Sales & Distribution
WebSphere Portal Technical Sales

Many thanks to the following IBM people for their assistance.

Lenore Ramm
Mike Seedorf
Charles Le Vay
Mart Nuttall
Tony Wrobel
Dale Chamberlain
Scott Broussard
Gary Craig
Robert Sager
Dave Heller
Lei Lu
Dave Pierson
Don Watson

And a specials thanks to our ITSO support staff at the Raleigh Center:

Margaret Ticknor
Jeanne Tucker
Tamika Barrow
Linda Robinson

Thanks to our ITSO management:

Jere Cline

And a special thanks to our IBM Pervasive Computing sponsor:

Mary Fisher

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This document created or updated on November 22, 2005.

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